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NOTE ON DISTRIBUTION AND SPERMATOGENESIS OF MYRIAPODA

DURING the spring of 1912, while working on the Myriapoda of Kansas at the University of Kansas, the writer had occasion to examine a bottle containing several specimens of *Scolopendra*, each of which had been dissected and had had the gonads removed. As there was no label with them, the matter was called to the attention of Dr. C. E. McClung, who stated they were some of the specimens used by Dr. Mauley W. Blackman in his work on the spermatogenesis of the Myriapoda, which he started at the above-named institution and later continued at Harvard University. As a result of his observations, the writer is convinced a mistake was made by Blackman in the identification of the form used.

Blackman's first paper¹ on the subject states that the specimens used were collected in June, 1900, in Russell county, Kansas, by Mr. W. S. Sutton and are "the large reddish-brown *Scolopendra*, found abundantly in the southwest. It is a large centipede, about four inches long and four lines across." In his second paper,² he identifies the specimens he was working on as *S. heros*, but in regard to the location where his material was collected, simply states that this paper is in the nature of a by-product of "a detailed study of the spermatocyte changes in *Scolopendra heros*, now practically ready for publication." This second paper was published from the University of Kansas, so evidently he used the same material that he did in his first and third papers on the subject. In his third paper³ of the series, he identifies his speci-

mens as *S. heros*, and says that most of the work was done on forms collected in Russell county, Kansas, but "later a number of specimens of the same variety of *S. heros* were received from Beulah, Colorado, through Mr. R. E. Scammon." The last paper⁴ in the series referring to this particular species of centipede was based on the same material "which served as a basis of several previous papers (Blackman :01, :03, :05), the majority of the slides having been mounted nine years."

The specimens seen by the present writer, and which formed part of Blackman's material, were *Scolopendra polymorpha* and not *S. heros*, as he designated them. A mistake in the identification of these two forms could easily occur, as each species is very variable not only in color but also in anatomical details, and they have been considered as synonymous by some writers, for example Bollman,⁵ whose writings were undoubtedly followed in making the original identification. However, they have been considered as distinct species for some time,⁶ the main difference between the two being that *S. heros* has two fine longitudinal lines or furrows on the cephalic plate which diverge cephalad, while *S. polymorpha* is without these lines.

The geographical distribution of the two forms also confirms the fact that Blackman was mistaken, as there is no record of *S. heros* having ever been taken north of the southern tier of counties in Kansas, while *S. polymorpha* is known to occur throughout the state.⁷ Russell county, where Blackman's

¹ Blackman, M. W., "Spermatogenesis of the Myriapods. I. Notes on the Spermatocytes and Spermatids of *Scolopendra*," *Kans. Univ. Quart.*, 10: 61-76, pls. 5-7, 1901.

² Blackman, W. M., "Spermatogenesis of the Myriapods. II. On the Chromatin in the Spermatocytes of *Scolopendra heros*," *Biol. Bull.*, 5: 187-217, 22 figs., 1903.

³ Blackman, W. M., "Spermatogenesis of the Myriapods. III. The Spermatogenesis of *Scolopendra heros*," *Bull. Mus. Comp. Zool. Harvard*, 48: 1-138, pls. 1-9, 1905.

⁴ Blackman, M. W., "Spermatogenesis of the Myriapods. VI. An Analysis of the Chromosome Group of *Scolopendra heros*," *Biol. Bull.*, 19: 138-159, pls. 1-2, 1910.

⁵ Bollman, Charles Harvey, "The Myriapoda of North America," *Bull. U. S. Natl. Mus.*, No. 46, 1893. (See pg. 175.)

⁶ Kraepelin, Karl, "Revision der *Scolopendriden*," *Jahrb. Hamb. Wiss. Anat.*, 20: 1-276, 1903.

⁷ Gunthorp, Horace, "Annotated List of the Diplopoda and Chilopoda, with a Key to the Myriapoda of Kansas," *Kans. Univ. Sci. Bull.*, 7: 161-182, pl. 20, 1913.

specimens came from, is some one hundred and twenty-five miles from the southern boundary, in the center of the state. Regarding the specimens from Beulah, Colorado, which Blackman recognized as "the same variety of *S. heros*" as those collected in Kansas, the altitude of this place (over 5,000 feet) would strongly preclude the possibility of *S. heros*, a sub-tropical form, being found there. Also, the fact that Blackman does not record any difference in the germ cells of these Colorado specimens from those collected in Kansas would prove that they were one and the same species.

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QUOTATIONS

THE ENDOWMENT OF BIOCHEMICAL RESEARCH IN ENGLAND

OUR university correspondent at Cambridge sends us the announcement of a munificent benefaction about to be made for research in biochemistry. A minimum aggregate expenditure of £165,000 is contemplated, and this sum, if necessary, will be supplemented. The scheme includes the erection of buildings on a site to be provided by the university, equipment, provision for maintenance, £25,000 for the endowment of a professorship, and £10,000 for a readership. The money comes from the residuary estate of the late Sir William Dunn, banker and merchant, and Liberal member for Paisley. The testator died in 1912, leaving a fortune valued at a million pounds, and appointing the directors of the Commercial Union Assurance Company as trustees, with some discretionary powers as to the disposal of his residual estate. There were pencil alterations in the text of the will, and it was only after a lawsuit that the trustees were able to act. They appointed an advisory committee under the chairmanship of Sir Jeremiah Colman, and many schemes were considered. Numerous and substantial gifts have been made to well-known philanthropic institutions, but the trustees reserved a large sum to provide a lasting and fitting memorial of Sir

William Dunn's generosity and to carry out his expressed wishes for the alleviation of human suffering and the encouragement of education. The benefaction to Cambridge should serve both these objects. Certainly it represents one of the most munificent and complete gifts ever made to one of the older universities. Only last month we congratulated the University of Oxford on Mr. Edward Whitley's offer of £10,000 towards the endowment of a chair of biochemistry, and on a donation of £5,000 from the British Dyestuffs Corporation to the laboratory of organic chemistry. We may hope that the friends of Oxford and of scientific research will do something to equalize the good fortune that has come to Cambridge. The chemical activities of the living cell and the living tissues provide a limitless field of research. Knowledge of them is only beginning, and until the methods and results of biochemistry have been developed, the practise of medicine will remain empirical, and fashions in drugs will change as quickly as fashions in ladies' hats. The old universities have the tradition of research, and their spirit of detachment supplies an atmosphere suitable to inquiries not too closely bound to immediately utilitarian objects. We rejoice in the great opportunity given to Cambridge, and do not doubt but that she will prove worthy of it—*The London Times*.

SCIENTIFIC BOOKS

Die Stämme der Wirbelthiere. By OTHENIO ABEL. Publ. 1919 by Verein wiss. Verleg., W. de Gruyter and Co., Berlin and Leipzig. 914 pages, 669 text figures.

It is to be regretted that there is no good comprehensive modern text-book in English dealing with vertebrate paleontology. The researches of the last twenty years have perhaps made less change in fundamental viewpoints and theories in this than in some other branches of science. But they have added enormously to the data of facts upon which it rests, and knit closer its relationships with the cognate sciences, geology on one side, zoology and comparative anatomy on the other.